Decentralisation Green Paper

August 2025 – Summary of Submissions

ELECTRICITY AUTHORITY
TE MANA HIKO

SUMMARY (1/2)

- The Electricity Authority's Green Paper *Working together to ensure our electricity system meets the future needs of all New Zealanders* sought to start the necessary discussion and debate among all electricity stakeholders and gather feedback on what a more decentralised electricity system might look like for New Zealand, how this might benefit consumers, and what might be needed to unlock these benefits.
- The number and diversity of submitters demonstrated that many from outside of the energy sector are engaged, expect to be involved in shaping the future electricity system to benefit consumers, and can offer critical insights and perspectives to complement those from within the sector.
- Overall, submissions demonstrated strong consensus on the importance of the Green Paper's purpose; support and appreciation for the Electricity Authority's leadership of this critical cross-sector conversation; and highlights the timeliness and urgency of progressing this discussion.
- Many submitters sought to emphasise key points from the Green Paper, including the proposition that we are moving towards a more decentralised future electricity system (Section 1.1 & 5.6); that this should include a range of different types, scales and locations of Distributed Energy Resources (DER) (Sections 2.5 and 2.6); and should retain key elements of the current system, including the grid and large-scale renewable generation (Section 5.6). This is an 'and' not an 'or' question.
- It appears that more work is needed to communicate the proposed form of a decentralised system, being a network of flexible, locally optimised energy systems, which connect through a strong grid (Figure 4 and Section 5.6), as a key mechanism to enable the outcomes and help to address the inherent challenges of the ongoing shift towards decentralisation.

SUMMARY (2/2)

- Overall responses demonstrated broad support for the opportunity outlined, including the potential outcomes, benefits and the challenges to realising the opportunity, with the majority of submitters sharing views on the scale of the benefits and challenges along with additional items for inclusion. Several submitters proposed modifications to the opportunity statement. There was strong consensus on the criticality of designing the system to ensure equitable access to the benefits of DER and decentralisation.
- While the emphasis varied by stakeholder segment, submissions highlight two broad perspectives on the proposed overall opportunity: that of key industry incumbents and of other stakeholders. The former sharing significant reservations and concerns, questioning whether decentralisation is necessary or preferable, and calling for more detailed analysis; the latter highlighting that decentralisation is already happening, offers huge potential benefits, and the criticality of urgent action to ensure outcomes for consumers are protected.
- This highlights the importance of the conversation started by the Green Paper, and the further work needed to build alignment on the vision for a more decentralised electricity system for New Zealand which will benefit consumers, and the actions needed to realise this.
- Over the coming months the Electricity Authority will build on the foundations laid through the Green Paper by:
    - Strengthening the relationships developed over the past 5 months and start to address engagement gaps;
    - Continuing to identify relevant initiatives, insights and learnings within NZ and internationally to inform our strategy and programmes;
    - Undertake a gap analysis and collaborate with other government organisations (and beyond, as appropriate) to develop and maintain a cohesive approach to unlocking the benefits of decentralisation for consumers; and
    - Continue to embed findings into our strategy and existing work programmes.

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Overview of Submissions

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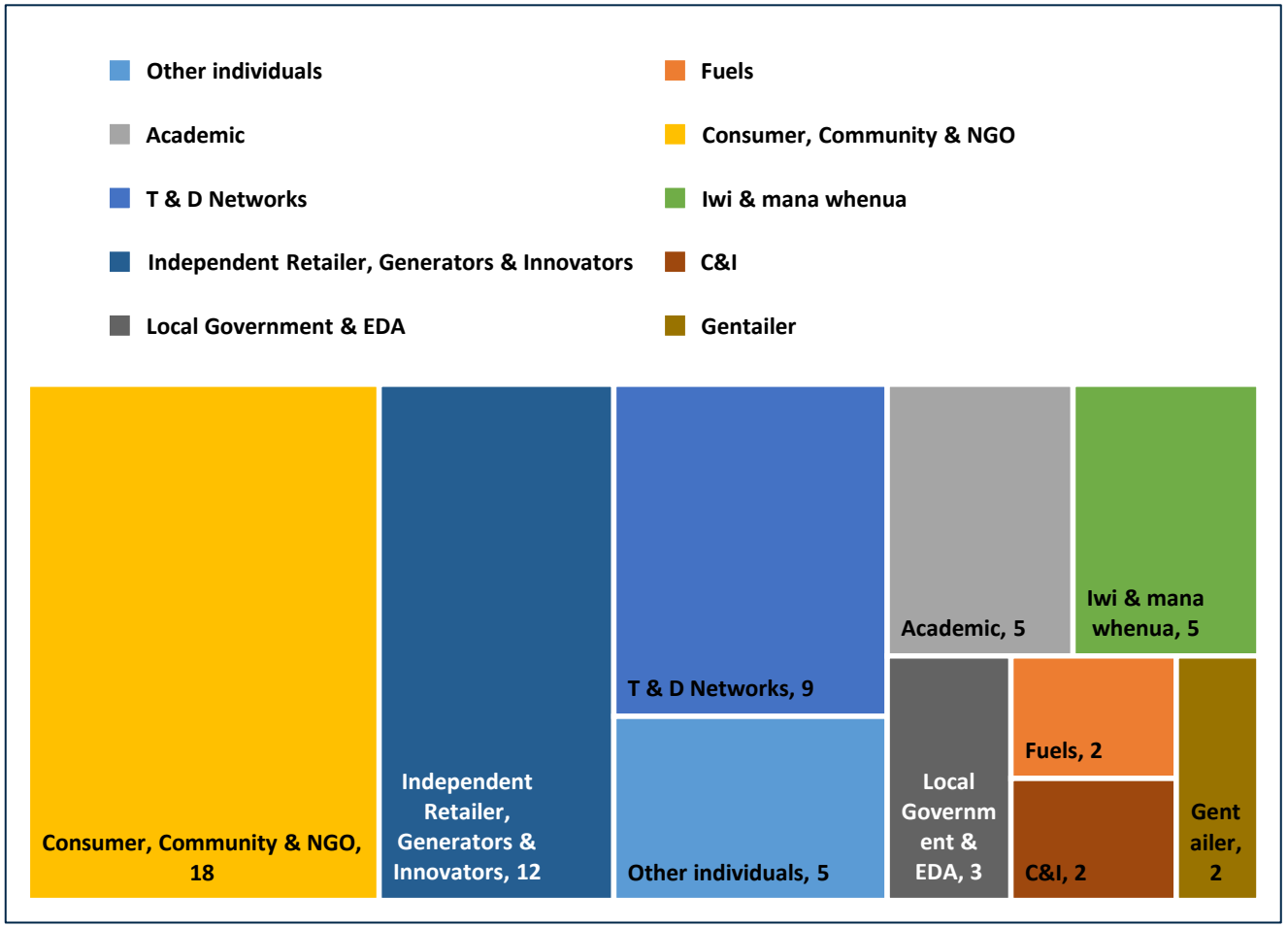
Overview of submitters on the decentralisation Green Paper

- The Decentralisation Green Paper was designed to challenge and stretch thinking and build understanding and consensus, ensuring diverse perspectives are heard on what the future system might look like, how this might benefit consumers, and what might be needed to gain these benefits.
- Consultation on the Green Paper was open from April 30 to 25 June 2025.
- 63 responses were received. Submissions were published on 8th July, alongside the Market Brief.
- Around one third (30%) of respondents were from consumer, community & non-government organisations (NGO); 16% were independent retailers, generators & innovators and 15% were transmission and distribution (T&D) networks. A further 8% were from iwi, and 8% were academics. The remaining responses were from electricity businesses, individuals and local government and economic development agencies (EDA).
- The Electricity Authority (the Authority) received several submissions from stakeholders who do not typically engage in its consultations – a key objective of the consultation. This is a good start; however, there are some gaps in who the Authority would like to engage with on this topic (see slide 37).



Breakdown of submissions by submitter type

List of submitters*

Segment	#	Submitters
Local Government & EDA	3	Queenstown Lakes District Council, Canterbury Mayoral Forum, Venture Taranaki
Iwi & mana whenua	5	Ngā Iwi o Taranaki, Te Kaahui o Rauru, Te Rūnanga o Ngāti Mutunga, Te Korowai o Ngāruahine Trust, Johny O'Donnell (OD&Co)
Consumer, community & non-governmental organisations	18	Lyttelton Energy Transition Society, Save Energy on Farm - Taranaki Catchment Communities, Protect Our Winters New Zealand, Rewiring Aotearoa, Community Energy Network (CEN), Utilities Disputes Ltd (UDL), Wise Group, Electrify Wairarapa, Community Energy Whāingaroa (CEWh), Consumer NZ, Margarita Parra, Roger and Melissa Robson-Williams (re:generations partnership), Bill Heaps (Energy for Good Limited), Nathan Surendran (Schema Consulting), Kate Hodgins, Jamie Silk (Silk Advisory and Innovation Ltd), Lindsay Jeffs, Earth First New Zealand Limited Partnership
Commercial & Industrial (C&I)	2	BusinessNZ Energy Council, Major Electricity Users' Group (MEUG)
Independent retailer, generators & innovators	12	For Our Good, SUPA Energy (SUPA), Bluecurrent, Ara Ake, Sustainable Energy Association of New Zealand (SEANZ), Independent Electricity Generators Association Inc. (IEGA), FlexForum, JP Gardiner (Optimal Protocol), Alister Gardiner, Electricity Engineers' Association (EEA), Cortexo, Our Energy
Academia	5	Baxter Williams- University of Canterbury, Michelle Renton- Victoria University of Wellington, National Institute of Water & Atmospheric Research Ltd (NIWA), Electric Power Engineering Centre (EPEC), Geoff Bertram
T&D networks	9	Transpower, Electricity Networks Authority , WEL Networks, PowerCo, Orion New Zealand Ltd, Counties Energy Limited (CEL), Unison Networks Limited & Centralines Limited, Wellington Electricity, Jonathon Kay (Lone Wolf Enterprises Limited)
Gentailers	2	Genesis, Electricity Retailers' Association of New Zealand (ERANZ)
Fuels	2	Bioenergy NZ, Energy Resources Aotearoa
Other Individuals	5	Bryan Leyland, Paul Montague, Greg Williams, Eugene Bajema (Bajema Consultancy), Graeme Weston (Renewable3D)
TOTAL	**63**	

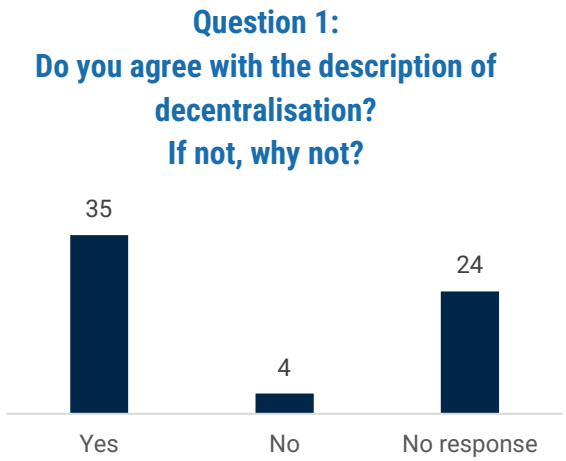
* Note: to support analysis, the Authority's approach is to allocate submitters to segments based on our understanding of the perspectives they bring.

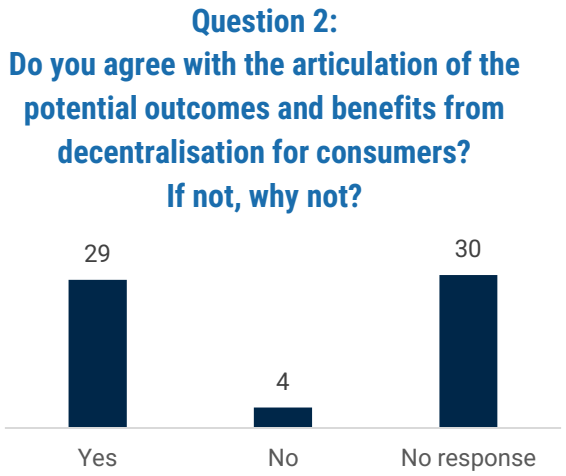
Key messages from submissions

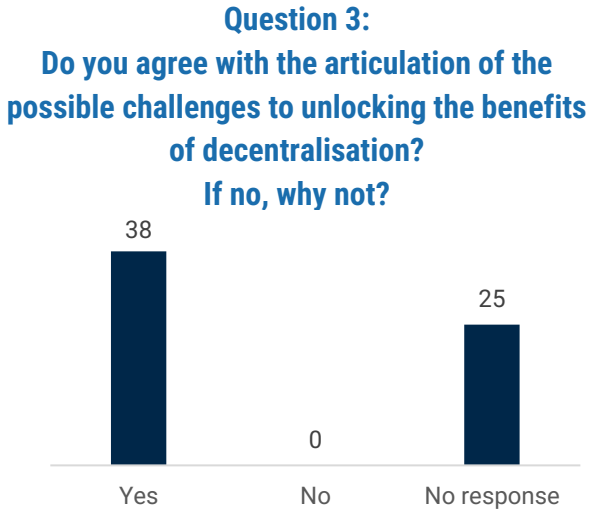
- Overall submissions demonstrated strong consensus on **the importance of the Green Paper purpose**; **support and appreciation** for this critical cross-sector conversation; and emphasis on the **timeliness and urgency** of progressing this discussion.
- Many submitters sought to **emphasise key points from the Green Paper**, including the proposition that we are moving towards a ***more*** decentralised future electricity system (Section 1.1 & 5.6); that this should include a range of different types, scales and locations of DER (Sections 2.5 and 2.6); and should retain key elements of the current system, including the grid and large-scale renewable generation (Section 5.6). This is an 'and' not an 'or' question.
- It appears that more work is needed to **communicate the proposed form** of decentralised system, being ***a network of flexible, locally optimised energy systems, which connect through a strong grid*** (Figure 4 and Section 5.6), as a key mechanism to enable the outcomes and help to address the inherent challenges of the ongoing shift towards decentralisation.
- Overall responses demonstrated **broad support for the opportunity outlined**, including the potential outcomes, benefits and the challenges to realising the opportunity, with the majority of submitters **sharing views on the scale of the benefits and challenges** along with additional items for inclusion. Several submitters proposed modifications to the opportunity statement. There was strong consensus on the criticality of designing the system to ensure **equitable access to the benefits** of DER and decentralisation, and a recommendation to **define resilience** in legislation and regulation.
- While the emphasis varied by stakeholder segment, submissions highlight **broad perspectives on the proposed overall opportunity**: that of key industry incumbents and of other stakeholders. The former supported the intended outcomes, while **offering constructive feedback**—seeking clarity on the necessity and implications of decentralisation, and advocating for further analysis to guide decision-making. The latter highlighted that decentralisation is already happening, offers huge potential benefits for consumers, developing consensus will be challenging, and **encouraged urgent action to ensure outcomes for consumer are protected.**

Support for the definition, vision, outcomes and challenges

Respondents were selective on the questions they responded to, appearing to choose those which best enabled them to get their points across. However high level responses suggested strong agreement with the proposition, as below.







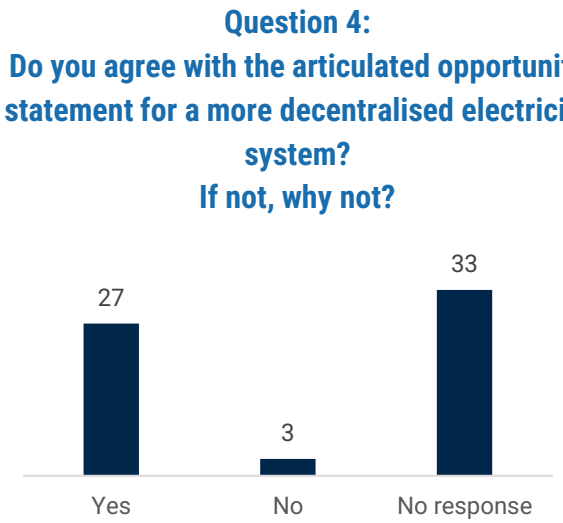


Figure 1 Summary of responses to questions

What we heard overall, by submitter type

Type	Theme of responses overall
Academia	Overall, positive and supportive of the decentralisation transition and the work the Authority is doing. More needs to be done to maximise the benefits of demand response. Emphasise the need for policies that ensure equitable access to DER benefits, and prioritise consumer engagement and trust.
T&D networks	Networks express broad support for the outcomes, while suggesting that there are other 'non-decentralised states' that the electricity system could be in that may be equally appealing and useful to NZ. Note that the current structure has served consumers well, and there are risks to change. Acknowledge the need for centralised generation and networks. Concern about the need to manage energy security and reliability in a world with high shares of small scale and variable renewable energy.
Iwi & mana whenua	Supportive of the decentralisation transition overall. Call to emphasise tino rangatiratanga, self-determination, and mana motuhake for Māori communities in energy planning. Decentralisation should not just be a matter of geographic redistribution but a shift in power, authority and agency. Point to stronger leadership needed to deliver and realise the benefits. Note the need for a stronger Crown-Māori Relationship.
C&I Business	Highlight growing economic viability for localised production and that decentralisation offers an enormous opportunity to improve the resilience and security of the energy system, so long as the necessary preparations are made. Many businesses are starting to explore on-site generation. The discussion of industrial and commercial hubs / energy parks is also starting to evolve, where generation could be co-located with multiple demand loads.
Consumer, community & NGO	Express strong support for the vision and opportunity. Call for the system to be designed for and with consumers, with consumer care, dignity and equity as foundational, not optional. Emphasise the criticality of enabling local markets, and consumer / community ownership and control of DER. Consider whether it is possible to have an authentic whole-of-system purpose such as addressing the trilemma under a competitive market model. Decentralisation is happening now, and urgent action is needed to ensure consumer outcomes.
Independent retailer, generators & innovators	Support decentralisation to unlock more affordable energy for consumers by lowering system costs. Government strategy, policy and regulation should commit and deliver this outcome. Highlight that demand response mechanisms play a key role in delivering lower system cost outcomes and the need for payment for these services to businesses and household customers. Realising the benefits depend on people finding it easy and routine to embrace their flexibility journey and 'say yes to flex'. Call for a cost benefit analysis to provide the foundation for the development of distributed generation and 'simplify / wash away the institutional, economic and regulatory barriers that currently exist as it would be clear it is in NZ Inc's interests to have new distributed generation'.

What we heard overall, by submitter type (cont)

Type	Theme of responses overall
Local government & EDAs	Broad support. Farmers and some industries are well placed to generate their own energy, be flexible to make the most of intermittent power and establish / utilise energy storage. They can also potentially provide services to the energy system at times of exceptional prices, network constraint, outage as well as support NZ's need for decarbonising electrification. Traditional planning can increase capacity for the near future and a degree of resilience, but will not provide the resilience and long-term affordability benefits that distributed solutions could. Call for urgent action.
Gentailers	Broad support for the articulation of decentralisation, benefits and challenges. See potential models where existing players partner with local groups or customers to deliver the same outcomes. Caution against conflating the benefits of DER and flexibility with decentralisation in ownership or any specific business model type. Competition will drive innovation and reward those business models that are most effectively able to harness the benefits of DER and create value for consumers. They advocate for more emphasis on the near-term operational challenges.
Fuels	Diverse views. Some saw this as a visionary and timely step in shaping a clean, secure, resilient, and inclusive system to empower local communities and promote diversified, low-emission energy sources. They want to see waste-to-energy included in the decentralised electricity framework. Some thought that this is really about augmentation of the current system, with additional energy sources and the market opportunities they present.
Other individuals	Diverse responses to the Green Paper. Some scepticism to being able to realise the proposed benefits. Need for government to do more to clarify the transition strategy. Pointed to overseas jurisdictions for lessons learned.

Surfacing different views

Topic	Example view from electricity industry	Example view from other stakeholders
Current state	*Our electricity system performs well by international standards. New Zealand is well-positioned to decarbonise, thanks largely to our predominantly renewable electricity system that performs in the top ten internationally against the energy trilemma of affordability, sustainability, and security.* **Genesis**	*As prices continue to rise, many businesses are starting to explore on-site generation, including behind the meter solar, wind and/or batteries. The discussion of industrial and commercial hubs / energy parks is also starting to evolve, where generation could be co-located with multiple demand loads. There are some clear resilience benefits from this type of approach and optimise the use of land zoned for these types of activities.* **MEUG**
Definition	*In our view, language like decentralisation and democratisation provide an unhelpful, indeed pejorative and normative characterisations of the challenge. It is really about augmentation of the current system, with additional energy sources and the market opportunities they present.* **Energy Resources Aotearoa**	*BEC agrees with the EA that decentralisation has the potential to unlock the three energy trilemma outcomes – affordability, security and sustainability. …widespread DER adoption reduces utility sales, pressuring traditional business models. Existing generators and retailers may resist DER growth or push for higher fixed charges, slowing the energy transition.* **Business Energy Council**
Opportunity	*We also note that there are other, non-decentralised states that the electricity system could be in that may be equally appealing and useful to NZ, e.g. abundant low-cost grid-served renewable generation.* **ENA**	*I believe the framing could go further to emphasise tino rangatiratanga, self-determination, and mana motuhake for Māori communities in energy planning. Decentralisation should not just be a matter of geographic redistribution but a shift in power, authority and agency…. Local systems should enhance hauora (wellbeing) in a holistic way.* **Johny O'Donnell**
Urgency	*We welcome and encourage the Authority to follow-up this paper with more detailed and rigorous exploration of the quantifiable benefits and costs of the high-level concepts outlined here.* **ENA**	*The Green Paper is a strong foundation for future discussion and policy development, but the urgency of action must be emphasised. Clear milestones and timelines should be included to ensure progress toward the 2040 goals.* **Community Energy Network**

Surfacing different views

Topic	Example view from electricity industry	Example view from other stakeholders
Benefits & Outcomes	*We think it is still an unknown as to whether P2P trading, local energy markets, community-scale batteries and VPPs will deliver low-cost and equitable access to electricity, in comparison to the status quo.* **ENA**	*Whilst this [Regional Electricity Plan] will provide an increase in capacity for the near future and a degree of resilience, it will not provide the resilience and long-term affordability benefits that a distributed solution could.* **Queenstown Lakes District Council**
Consumer interest	*We note that a significant number of consumers, 45%, have been with their current electricity provider for more than five years. This aligns with EMI switching trends, which show that as of 30 April 2025, the 12-month rolling rate for Trader Switch was only 5.48%, with Move in switch at 13.41%; all switch types combined was 18.92%. These figures demonstrate that a significant majority of customers do not actively seek to switch retailers. This raises questions about the Authority's assumptions regarding consumer appetite for increased electricity market participation.* **Orion**	*Decentralisation is as much of a social transition/trend as it is a technology one.…Communities and consumers are really interested in how they can participate and how they can get benefit from doing so. There is a myth in the electricity industry that they don't – but when we talk to them, they really do care. In our experience, communities and consumers investing in decentralisation want agency over how they participate. They have no interest in being a retailer or learning how to hedge – i.e. the complexities that market participants engage with day to day – they just want to participate and save money.* **Our Energy**
Ownership and control	*In our experience it is helpful to separate access to capital from the community benefits that decentralised solutions provide. Given that the primary benefits of decentralisation relate to participation and social licence, it is not necessary for homeowners to own the DERs that they are participating with.* **PowerCo**	*The pivotal factor in unlocking these broader benefits lies in ensuring that individuals and communities retain control over the projects and the benefits they generate. To achieve this objective, it will be crucial that established energy organisations adopt an enabling role rather than assuming ownership and full control of decentralised energy projects.* **Energy for All**
Local markets & Integration	*For New Zealanders to benefit from a decentralised system, there is still a need to focus on how local energy systems can complement and leverage a robust and resilient national grid and associated generation assets… The Authority should further explore practical market integration challenges, particularly regarding how distributed resources, demand response, and local energy sharing will fit into existing wholesale and retail market structures.* **ERANZ**	*The formation of local market structures serves as the pivotal enabler for realising the potential of community energy resources….It is crucial to refrain from hindering the development of decentralised energy due to the necessity of integrating it into the existing wholesale market. Instead, we should adopt an inverted approach, opening the decentralised markets as if the wholesale market did not exist. Subsequently, we should identify the necessary actions to be taken to integrate the wholesale market with the local markets.* **Energy for All**

Summary of submitter responses to Green Paper questions

ELECTRICITY AUTHORITY
TE MANA HIKO

Question 1: Do you agree with the description of decentralisation? If not, why not?

Respondents broadly agreed with the description of decentralisation provided in the Green Paper. 56% of respondents agreed with the description of decentralisation, 38% did not directly respond and only 7% disagreed with the description.

Agreement was high for iwi, NGOs, local governments and energy retailers.

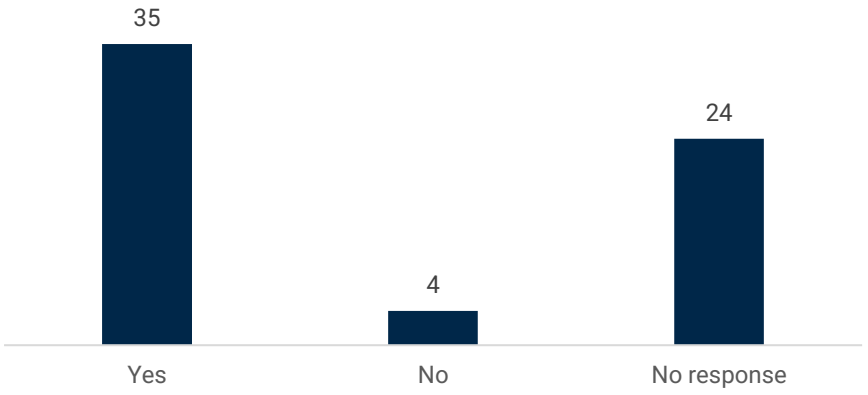


Figure 2: Response to description of decentralisation

Why did people disagree with the definition?

Our view is that smaller scale renewables and other DERs located closer to consumers will complement large scale generation rather than replacing it. **- Powerco**

[The definition] needs to make linkages to the national grid, major generation, transmission, distribution, and demand projections. What is presented in the paper is a small amount of the total energy use of New Zealanders. **- Energy Resources Aotearoa**

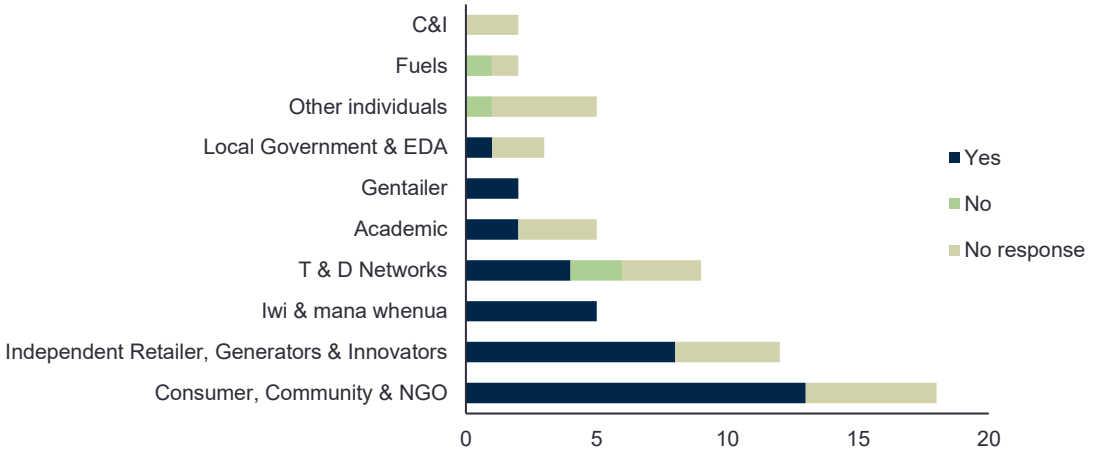


Figure 3: Response to description of decentralisation, by group

Question 1: Do you agree with the description of decentralisation? If not, why not?

Submitter type	Key themes
Consumers, Communities, & NGOs	1. **Accessibility and Equity**: Ensure equitable access to DERs for all households, including renters and low-income families and address systemic biases in decentralised energy systems to create a level playing field. 2. **Consumer Empowerment, Community Engagement and Localism**: Recognise the role of prosumers (self-generators) and enhance consumer choice, control, and participation in energy markets. Engage local communities, iwi, and hapu in energy planning and decision-making and promote community ownership of energy assets and local energy sharing models to enhance resilience and meet diverse social and cultural needs. 3. **Innovation and Technology**: Highlight the importance of digitalisation and smart technologies in optimising energy management and increasing consumer flexibility. 4. **Regulatory and Financial Enablement**: Advocate for regulatory frameworks that support community-led initiatives and eliminate barriers for new energy models and emphasise innovative funding mechanisms to facilitate investment in DERs and community energy projects. 5. **Resilience and Adaptability**: Plan for flexibility and adaptability in energy systems to effectively respond to changing consumer needs and market conditions.
Independent Retailers, Generators, & Innovators	1. **Empowered Consumers and Communities**: Recognise consumers as active market participants and ensure inclusive engagement with local communities, iwi, and hapū in planning and decision-making. 2. **Equity and Inclusive Access**: Promote equitable access to DERs for all, including renters and low-income households, and support care infrastructure and hardship protocols. 3. **System Evolution and Coordination**: View decentralisation as a system evolution requiring coordination across transmission, distribution, and behind-the-meter assets. 4. **Flexibility and Smart Technologies**: Emphasise the role of flexible resources and smart technologies to optimise energy use and enhance system responsiveness. 5. **Data and Consumer Literacy**: Advance data management for actionable insights and prioritise consumer education to build energy literacy and support behaviour change.
T & D Networks	1. **Equity, Trust, and Community Engagement:** Build trust among stakeholders, ensure equitable access to DERs, and involve communities, iwi, and hapū in energy planning. 2. **System Evolution and Coordination:** Treat decentralisation as a system evolution requiring seamless coordination across all energy system levels, including transmission, distribution, and consumer assets. 3. **Flexibility, Technology, and Data:** Enable dynamic response through flexible, dispatchable resources, smart technologies, and advanced data analytics. 4. **Consumer Empowerment and Education:** Support informed and active consumers through education, energy literacy, and roles that promote ownership and participation. 5. **Strategic, Inclusive Transition:** Ensure long-term, balanced planning that integrates local resilience, national infrastructure, and regulatory frameworks for a secure, cost-effective, and inclusive energy future.
Other Individuals	1. **Real-World Relevance**: Emphasising the need for decentralisation strategies to be grounded in real-world applications and consumer experiences. 2. **Role of Electric Vehicles (EVs):** EVs drive consumer interest in local energy production, enhance energy literacy, and encourage active engagement with energy use and sources.

Question 1: Do you agree with the description of decentralisation? If not, why not?

Submitter type	Key themes
Academic	1. **Democratisation, Accountability, and Governance**: There is a need for clear, system-wide definitions of democratisation that maintain accountability within new governance models and address the complexity of New Zealand's electricity system. 2. **Structural Barriers to Decentralisation:** Structural barriers such as the lines-energy split, prohibition of islanding, and grid pricing distortions currently hinder local energy integration, reduce system resilience, and disincentivize distributed generation. 3. **Role of DERs**: Highlighting the potential for DERs to be within individual property control and the importance of visualizing their contributions to the overall energy system and control flow. 4. **Economic Viability of Distributed Generation**: Stressing the need for pricing arrangements that recognise the benefits of distributed generation, advocating for a return to bundling arrangements to create a level playing field.
Iwi & mana whenua	1. **Role of DERs**: DERs like solar and batteries are vital for decentralisation and consumer choice, though viability concerns exist for technologies like micro-hydro, especially for iwi and hapū. 2. **Market Reform**: Current market dominance by gentailers limits competition; a fundamental shift in government incentives and energy perception is needed. 3. **Consumer and Community Trading**: Empower consumers and communities to trade energy, drawing from and feeding into the grid as active market participants. 4. **Māori Governance and Engagement**: Ensure genuine consultation with iwi and hapū, embedding tino rangatiratanga and mana motuhake in decentralisation efforts. 5. **Environmental and Ownership Considerations**: Address land and freshwater ownership concerns and implement robust regional planning to manage environmental impacts of small-scale hydro projects.
Local Government & EDA	1. **Digitisation and Personalised Energy Use:** Emerging technologies, including AI, enable deeper, more personalised insights into consumer behaviour, unlocking opportunities for dynamic, automated, and rewarding demand-side participation 2. **Industry Adaptation and System Change:** To realise decentralisation benefits, the energy sector must evolve its systems and engagement strategies to accommodate the diverse motivations and capacities of rural, industrial, and community stakeholders. 3. **Resilience and Adaptability**: Shift toward a decentralised energy system that enhances resilience, sustainability, and equity.
Fuels	1. **Need for Comprehensive Integration:** The Green Paper's approach to decentralisation is overly simplistic, lacking integration with national grid, generation, transmission, and demand projections, and overlooks the broader energy system and population impact.
Gentailers	1. **Market Integration**: Decentralisation must be clearly aligned with existing market structures, including wholesale coordination, pricing, and retail offerings. 2. **Demand-Side Flexibility**: Genesis' goals for EV uptake and solar growth highlight the value of DERs in enabling flexible, electrified consumer lifestyles. 3. **Consumer Trust and Innovation**: Building trust and enabling innovative models like peer-to-peer trading and VPPs are essential; barriers to trials should be removed. 4. **Coordination and Hybrid Approaches**: A hybrid model involving current industry players can balance decentralisation with system coordination and operational efficiency. 5. **Ownership Neutrality and Competition**: DER benefits shouldn't be tied to specific ownership models; open competition is key to innovation and consumer value.

Question 2: Do you agree with the articulation of the potential outcomes and benefits from decentralisation for consumers? If not, why not?

Respondents broadly agreed with the description of decentralisation provided in the Green Paper. 46% of respondents agreed with the description, 48% did not directly respond and only 7% disagreed with the description.

Agreement was highest for individuals, NGOs and peak bodies.

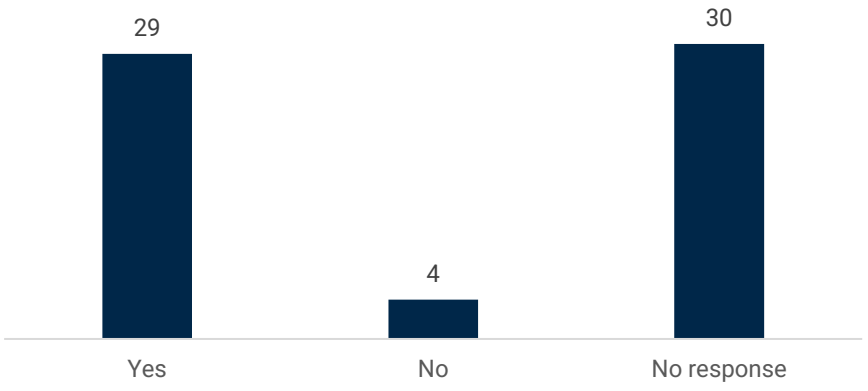


Figure 4: Response to outcomes and benefits of decentralisation

Why did people disagree with the definition?

We expect energy sovereignty to be a key outcome of decentralisation. **– Iwi**

It is far from clear whether the decentralisation will result in lower costs. **– Wellington Electricity**

Real world experience shows that there are little or no benefits and a high risk of high costs and an unreliable supply. **– Bryan Leyland**

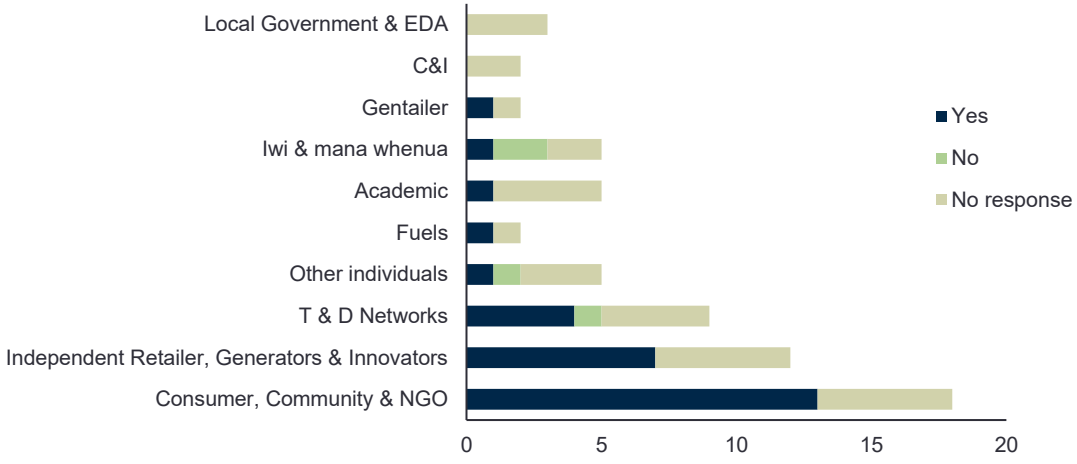


Figure 5: Response to outcomes and benefits of decentralisation, by group

Question 2: Do you agree with the articulation of the potential outcomes and benefits from decentralisation for consumers? If not, why not?

Submitter type	Key themes
Consumers, Communities, & NGOs	1. **Broader Value of Decentralisation**: Decentralisation offers non-energy benefits such as community empowerment, emissions reduction, and local economic development, including job creation and retained local value. 2. **Resilience and Energy Security**: Localised storage and connected assets enhance supply security and enable faster outage recovery, strengthening overall system resilience. 3. **Equity and Accessibility**: Ensuring low-income households and rural communities, including farmers, can access and benefit from decentralised technologies requires targeted support and fair compensation. 4. **Energy Literacy and Engagement**: Ongoing consumer education and active community engagement are essential to maximise participation and informed energy choices. 5. **Collaborative Transition Planning**: A successful energy transition requires collaboration across councils, iwi, hapū, and community groups to develop a unified, inclusive roadmap for a decentralised energy system.
Independent Retailers, Generators, & Innovators	1. **Regulatory Reform and Market Enablement**: Significant legislative and regulatory changes are needed to support DER integration, promote non-network alternatives, and remove barriers to innovation. 2. **Equity and Accessibility**: Decentralisation must address disparities in access, ensuring benefits reach low-income and digitally disadvantaged consumers. 3. **Smart Meters and Data Utilisation**: Smart meters are essential for demand management, consumer empowerment, and supporting renewable integration through improved data visibility. 4. **Economic and Social Opportunity**: Decentralisation can drive rural development, new income streams, and innovation through open data and diverse market participation. 5. **System Coordination and Consumer Focus**: Emerging models like P2P trading and community batteries must support, not fragment, the grid—backed by strong infrastructure and a clear commitment to consumer benefits.
T & D Networks	1. **Cost, Reliability, and Equity Concerns**: Decentralisation may not guarantee lower costs or affordability and could widen inequities without targeted support for vulnerable consumers. 2. **Positive Electrification Feedback Loops**: Locally produced low-cost energy can drive further electrification and investment, enhancing resilience and sustainability. 3. **Essential Consumer Engagement and Trust**: Active consumer participation is both a benefit and a key enabler of successful decentralisation. 4. **Implementation Uncertainty**: Realising benefits depends on evolving market conditions, regulatory support, and technology development, which remain uncertain. 5. **Need for Infrastructure and Clarity**: Robust network infrastructure is critical, and clear distinctions between equity, access, affordability, and fairness must guide policy.
Other Individuals	1. **Cost and Reliability Concerns**: Current systems offer limited benefits while posing risks of higher costs and unreliable supply. 2. **Electrification Feedback Loop**: Locally produced, low-cost energy can drive further electrification and investment in local generation. 3. **Seasonal Opportunities**: Surplus seasonal energy, particularly in summer, can support cost-effective electrification of seasonal activities and automation, reinforcing local energy investment.

Question 2: Do you agree with the articulation of the potential outcomes and benefits from decentralisation for consumers? If not, why not?

Submitter type	Key themes
Academic	1. **Equity and Resilience Focus**: Calls for clearer prioritisation of equity, hardship, and resilience in energy communities, noting differences in funding models from other countries. 2. **Support for Innovation**: Advocates for structural flexibility to enable innovative business models, such as multi-trader relationships for managing energy flows. 3. **Tackling Anticompetitive Structures**: Critiques entrenched industry interests that hinder meaningful reform, calling for action on anticompetitive barriers. 4. **Clear Consumer Value Proposition**: Stresses the need to clearly communicate how decentralisation and DERs will deliver tangible benefits to consumers, beyond industry gains.
Iwi & mana whenua	1. **Regulatory Misalignment**: Criticism of recent revenue increases for Transpower and lines companies, seen as counterproductive to innovation and decentralisation goals. 2. **Energy Sovereignty**: Decentralisation is expected to reduce reliance on profit-driven gentailers and empower communities with greater energy control. 3. **Lack of Government Support**: Key decentralisation benefits depend on government incentives that are currently lacking, raising concerns about equitable access for vulnerable communities. 4. **Māori Perspectives and Resilience**: Advocates for integrating mātauranga Māori and marae-based infrastructure to support community wellbeing and resilience in local energy systems.
Local Government & EDA	1. **Urgent Leadership Needed**: Calls for bold, proactive action from the Electricity Authority to lead the decentralisation transition. 2. **Shifting Consumer Choices**: Falling DER costs, rising grid prices, and new financing options may rapidly change consumer behaviour, requiring timely policy responses. 3. **Economic Case for Renewables**: Distributed renewables, especially solar PV, offer lower costs and greater resilience for consumers, industries, and farmers. 4. **Farmers and Industry as Energy Partners**: Farmers and industries are well-placed to generate energy, manage intermittency, and support the grid during high demand or disruptions.
Fuels	1. **Realistic and Inclusive Framing of Decentralisation Impacts**: The submission calls for a more balanced presentation of decentralisation by addressing both benefits and risks together to better reflect net consumer impacts. It also emphasises that benefits may not be equitably shared across all energy users and recommends including diesel generators and LPG as part of resilience strategies against climate and other hazards.
Gentailers	1. **Implementation Strategies Needed**: Support for decentralisation must be backed by clear, practical strategies for achieving, funding, and delivering outcomes like resilience and community empowerment. 2. **Market Functionality and Innovation**: Equity and affordability depend on effective market design, innovation, and consumer education—not just DER uptake. 3. **Collaborative Engagement:** Some submitters recommend industry round tables to share insights and foster collaboration on decentralisation. 4. **Regulatory Enablement of DER**: Supports regulatory frameworks that unlock DER and demand-side flexibility to improve system performance and align with statutory objectives.

Question 3: Do you agree with the articulation of the possible challenges to unlocking the benefits of decentralisation? If not, why not?

Respondents broadly agreed with the description of the possible challenges to unlock the benefits of decentralisation provided in the Green Paper. 61% of respondents agreed with the description of possible challenges, 39% did not directly respond and no respondents disagreed with the description.

Agreement was highest for individuals, NGOs, peak bodies and networks. No respondents directly disagreed with the articulation of the possible challenges to unlocking the benefits of decentralisation.

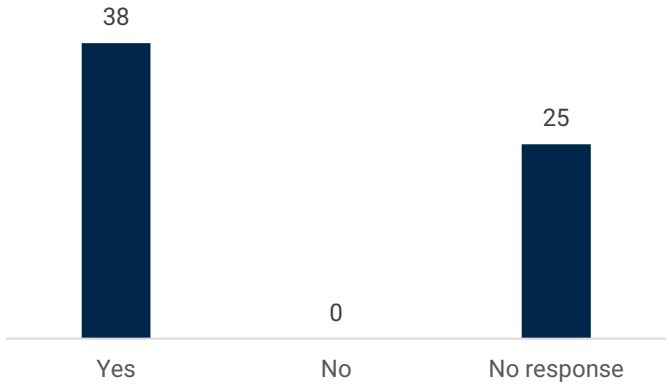


Figure 6 Response to possible challenges of decentralisation

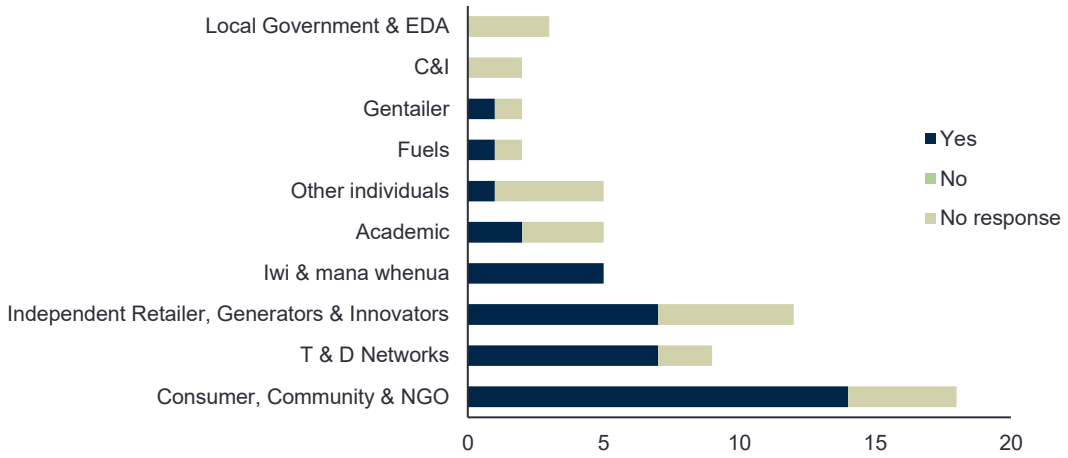


Figure 7 Response to possible challenges of decentralisation, by group

Question 3: Do you agree with the articulation of the possible challenges to unlocking the benefits of decentralisation? If not, why not?

Submitter type	Key themes
Consumers, Communities, & NGOs	1. **Strategic Shift and System Reform**: A deliberate shift in thinking is needed to overcome system incumbency, scale barriers, and reliance on market signals, enabling the growth of innovative, decentralised solutions. 2. **Equity, Access, and Trust**: Ensuring equitable access to DERs—especially for low-income households and renters—requires targeted support, while building consumer trust and engagement is critical for broad adoption. 3. **Collaborative Governance and Local Leadership**: Effective decentralisation depends on governance reform and strong collaboration among local energy groups, councils, iwi, and communities to co-create a shared energy vision. 4. **Support for Community Energy and Innovation**: Community energy projects can drive resilience and local benefit but need regulatory, legal, and data access support, along with strong partnerships with EDBs. 5. **Innovative Financial and Regulatory Models**: New financial products, local trading systems, and enabling regulatory frameworks are essential to support community ownership and scale decentralised energy markets.
Independent Retailers, Generators, & Innovators	1. **Governance Reform and Systemic Barriers**: A fundamental rethink of electricity sector governance is needed to overcome incumbency, ensure fair integration of DERs, and shift control beyond traditional operators. 2. **Equity, Access, and Consumer Trust**: Targeted policies are essential to ensure equitable access for all, especially low-income and marginalised groups, while building trust and meaningful consumer participation is critical for decentralisation success. 3. **Collaboration, Coordination, and Workforce Readiness**: Effective decentralisation requires coordination among stakeholders, resolution of interoperability and data challenges, and workforce upskilling to manage complex, decentralised systems safely. 4. **Market Access, Flexibility, and Digitalization**: Clear market mechanisms are needed to recognise DER value, support flexibility, reduce transaction costs, and enable consumer engagement through digital tools and smart infrastructure. 5. **Consumer-Centric and Intergenerational Approach**: Energy solutions must prioritise consumer needs and values, incorporating long-term, intergenerational perspectives to foster community trust and sustainable system design.
Other Individuals	1. **Scepticism About Cost Benefits**: Doubts persist about decentralisation's ability to lower electricity costs, with few international examples showing successful, affordable implementation. 2. **Call for Governance Reform**: A fresh regulatory and governance approach is needed to align with modern DER technologies, questioning the relevance of traditional market structures. 3. **Ineffective Pricing Models**: Existing pricing frameworks discourage local generation and flexibility, with high fixed charges limiting consumer incentives and system responsiveness.

Question 3: Do you agree with the articulation of the possible challenges to unlocking the benefits of decentralisation? If not, why not?

Submitter type	Key themes
T & D Networks	1. **Comprehensive Reform and Governance Overhaul**: A fundamental redesign of electricity sector governance is needed, supported by MDAG's reform package, to enable efficient integration of DERs into markets. 2. **Equity, Funding, and Access**: Targeted policies and inclusive investment structures are required to ensure equitable access to decentralisation benefits, especially for low-income and marginalised communities, while attracting broader capital beyond homeowners. 3. **Coordination, Integration, and Workforce Readiness**: Effective decentralisation depends on improved coordination across market participants, interoperable systems, data access, and upskilling the workforce to manage complex, digital energy systems. 4. **Market Mechanisms and Consumer Flexibility**: Clear, consistent frameworks are needed to recognize DER value, reduce transaction costs, and support flexible, consumer-driven participation in a smart energy system. 5. **Trust and Interconnected Decentralisation**: Building consumer trust is essential, with decentralisation framed as interconnected—leveraging grid connections for broader access, resilience, and shared system benefits.
Academic	1. **Consumer Literacy and Transparent Information**: Improved energy literacy and access to clear, comparable information are essential for consumers to make informed decisions and fully benefit from decentralisation. 2. **Trust, Engagement, and Market Power Imbalance**: Low literacy and lack of transparency hinder trust, while entrenched market dynamics and incumbent power limit genuine consumer empowerment. 3. **Governance Reform and Local Empowerment**: Decentralisation requires a shift from centralised control toward local decision-making, involving governance, asset ownership, and operational restructuring. 4. **Regulatory and Technical Enablement**: Effective integration of DERs and renewable systems depends on overcoming regulatory, operational, and technical barriers within the existing energy framework. 5. **Political Will for Structural Change**: Achieving meaningful decentralisation will demand bold political decisions and radical structural reforms across the electricity sector.
Iwi & mana whenua	1. **Urgency of Rapid and Inclusive Electrification**: Electrification must progress quickly while prioritising the needs of vulnerable and marginalised communities. 2. **Equitable Access to Renewable Energy**: Ensuring Māori and underserved communities can access and benefit from renewable energy is essential for a just transition. 3. **Capital Access Barriers**: Limited access to funding remains a major hurdle for Māori to develop energy infrastructure and adopt renewable solutions. 4. **Tailored Funding Mechanisms**: New financing models are needed to support collective ownership in contexts like papakāinga, whenua Māori, and marae. 5. **Te Tiriti-Based Governance**: Energy governance must uphold Te Tiriti o Waitangi, embedding Māori partnership, rights, and perspectives in decision-making.

Question 3: Do you agree with the articulation of the possible challenges to unlocking the benefits of decentralisation? If not, why not?

Submitter type	Key themes
Local Government & EDA	1. **Regional Resilience and Capacity Planning**: Queenstown Lakes District faces energy capacity challenges, given Queenstown is situated at the end of a limited transmission spur line and residents need to be prepared for significant power interruption in the event of an earthquake or Alpine Fault event. As such, the district has been working with Transpower and the EDB to develop a Regional Electricity Plan. 2. **Support for Distributed Solutions**: Traditional planning will not provide the resilience and long-term affordability benefits that a distributed solution could. Balancing traditional infrastructure with decentralised options like household solar is crucial for resilience, affordability, and long-term system sustainability. Encourages support for the Ratepayer Assistance Scheme for solar installations. 3. **Systemic Barriers to Innovation and Scalability**: The current energy system's structure and market reliance hinder the scaling of innovative solutions, requiring intentional planning and policy support. 4. **Consumer-Centric Engagement and Literacy**: Improved consumer engagement, energy literacy, and reward structures are essential to enable meaningful participation in decentralisation and ensure solutions meet customer needs.
Fuels	1. **Governance Clarity and Decision-Making Risk:** Decentralised decision-making must avoid complexity and ensure clear authority roles to maintain effective central grid management. 2. **Operational Complexity and Grid Stability:** Two-way energy flows and intermittent renewables increase grid stability risks, requiring real-time monitoring, standardised products, and a skilled workforce. 3. **Equity and Access Concerns:** There's scepticism about whether lower-income households and the "squeezed middle" will benefit from decentralisation, especially as energy costs rise. 4. **Targeted Financial Support Only:** Subsidies should be used cautiously and only to address market failures, to avoid widening inequities in DER and EV adoption.
Gentailers	1. **Operational and Investment Pressures:** Urgent emphasis is needed on near-term challenges such as capacity constraints, supply security, and investor uncertainty, which critically impact the feasibility of decentralisation. 2. **Trade-offs in Decentralised Planning:** Diffuse, community-led models may hinder efficient DER scaling; aggregated, partner-led approaches may better support rapid deployment with lower complexity. 3. **Need for Regulatory Clarity and Consistency:** Clear, system-wide rules for flexible load control and DER integration are essential to reduce friction and support confident market participation. 4. **Technology Interoperability and Data Access:** Standardisation and secure data-sharing protocols for DER technologies (e.g. EVs, batteries) are vital to scale flexibility services and ensure efficient system integration. 5. **Equitable Pricing and Funding Models:** Fair pricing structures and upfront funding access are key to enabling broad consumer participation in DERs while avoiding exploitative practices.

Question 4: Do you agree with the articulated opportunity statement for a more decentralised electricity system? If not, why not?

Respondents somewhat agreed with the description of the opportunity statement provided in the Green Paper. 43% of respondents agreed with the description of opportunities, 52% did not directly respond and 5% or 3 respondents disagreed with the description.

Agreement was highest among individuals, NGOs and peak bodies.

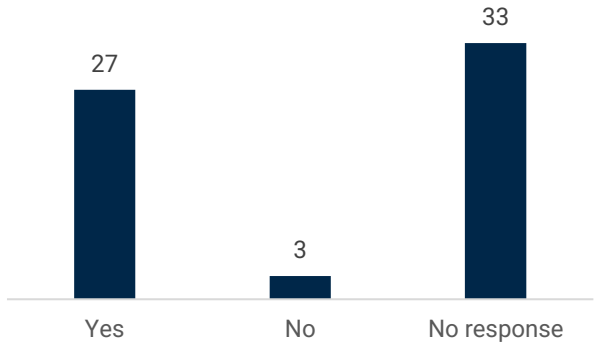


Figure 8 Responses to the opportunity statement

Why did people agree with the definition?

Empowering our communities and enabling a fairer and more equitable electricity system through decentralisation is not going to be easy, however you need to put a stake in the ground. The opportunity to make long lasting change is here and we have the technology and expertise across the sectors to make this happen. **– Wise Group**

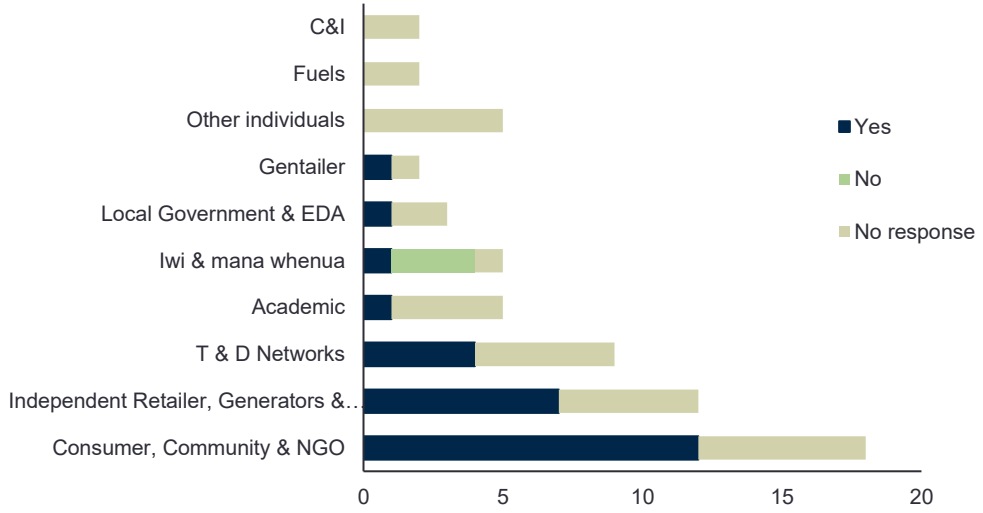


Figure 9 Responses to the opportunity statement, by group

Question 4: Do you agree with the articulated opportunity statement for a more decentralised electricity system? If not, why not?

Submitter type	Key themes
Consumers, Communities, & NGOs	1. **Community Empowerment and Equity:** Decentralisation is seen as a means to empower communities, iwi, and hapū, with strong support for community ownership and equitable access to energy outcomes, especially for vulnerable groups. 2. **Clear Framing and Broader Benefits:** Calls to reframe the opportunity statement around empowerment, clarify terms like "fair access," and highlight wider benefits such as warmer homes and transport decarbonisation, while addressing the risks of inaction. 3. **DERs for Decarbonisation and Affordability:** DERs are viewed as central to accelerating electrification and reducing emissions, while improving affordability and resilience when integrated with existing infrastructure. 4. **Grid Optimisation and Regulatory Flexibility:** Support for leveraging current grid assets alongside flexible, evolving market structures that enable innovation, local energy models, and voluntary investment. 5. **Regional Action and Collaboration:** Emphasis on regional strategies, consistent benefit assessments, and strong local collaboration to translate the national vision into place-based implementation.
Independent Retailers, Generators, & Innovators	1. **Urgency and Cost-Effective Planning**: Emphasises the need for rapid action and early consideration of decentralised, lower-cost alternatives to traditional infrastructure investments. 2. **Evolving Role of DSOs and Governance Reform**: Calls for DSOs to become active system enablers and for bold governance changes that keep pace with technological shifts. 3. **Balanced, Consumer-Centric Energy System**: Advocates for integrating centralised and decentralised solutions based on system value, while ensuring affordability, service quality, and inclusivity for all consumers. 4. **Smart Meter Enablement**: Highlights the critical role of smart meters in unlocking system flexibility, improving consumer control, and enhancing trust in energy markets. 5. **Collaboration and Regulatory Innovation**: Stresses the importance of multi-stakeholder collaboration and recommends regulatory sandboxes to support innovation and adaptive rulemaking.
T & D Networks	1. **Call for Evidence-Based Policy**: Emphasis on the need to quantify the economic viability of DERs and avoid assumptions, advocating for data-driven decision-making to ensure cost-effective outcomes. 2. **Balanced View of Energy Models**: Support for a mixed system that values both centralised and decentralised energy models, cautioning against over-prioritising decentralisation without understanding its true cost and benefit. 3. **Clarification of Key Concepts**: Urges clearer definitions of terms like "local energy markets" to prevent confusion, inefficiencies, and costly misinterpretations in implementation. 4. **Recognition of Uncertainties**: Highlights several practical unknowns—including timing, cost impacts, and consumer value—which must be addressed to guide realistic planning. 5. **Fair Market Competition and Barrier Removal**: Supports reforming market settings to eliminate inefficient barriers and enable fair competition among all energy solutions.

Question 4: Do you agree with the articulated opportunity statement for a more decentralised electricity system? If not, why not?

Submitter type	Key themes
Other Individuals	1. **Cost Concerns for Rooftop Solar**: Rooftop solar is seen as too expensive compared to utility-scale solar, limiting its viability in New Zealand. 2. **Scepticism About Decentralisation Growth**: Questions are raised about whether decentralisation is genuinely increasing, given the focus on large-scale generation. 3. **Need for Workforce Training and Standards**: Emphasis on learning from Australia by upskilling tradespeople and setting quality standards for DER installations. 4. **Incentive Misalignment**: Doubts about whether incumbent energy suppliers are motivated to support decentralisation. 5. **Risk of Consumer Disengagement**: Concern that if the grid is perceived to serve corporate interests over public good, consumer trust and participation may erode.
Academic	1. **Resistance from Incumbents**: Concerns that vested industry interests may obstruct decentralisation and DER adoption. 2. **Endorsement of 2040 Vision**: Broad support for the 2040 opportunity statement, with a call for practical implementation steps. 3. **Clarity on Beneficiaries**: Questions about whether DER benefits are truly directed at consumers and communities, or primarily industry-focused.
Iwi & mana whenua	1. **Opportunity to Leverage Distributed Energy Resources**: Submitter emphasises the potential to use DERs to understand thresholds that could defer or avoid significant grid infrastructure upgrades. 2. **Cost Implications for Households**: The Authority's role in incentivising DER adoption is crucial for improving energy affordability and consumer choice.
Local Government & EDA	1. **Leveraging DER to Defer Costly Grid Upgrades:** Submitter highlights the potential for DER to defer or avoid major grid upgrades, which could save households significant costs—estimated at $500 per year in Queenstown alone. 2. **Incentivise and promote DER adoption:** Authority is urged to set incentives that promote DER adoption to enhance affordability and consumer choice.
Fuels	1. **Evolution vs. Transformative Change**: The submission disagrees with the characterisation of the current developments as a "transformative change," suggesting instead that the changes are more accurately described as an evolution of the existing system.
Gentailers	1. **Support for Flexibility and Empowerment**: Strong backing for a flexible electricity system that enhances consumer choice and community empowerment. 2. **Connection to Existing System**: Urges clearer linkage between decentralisation and the current electricity market, including trade-offs and risks. 3. **Diverse Consumer Preferences**: Notes that many consumers will still prefer simple, stable retail models, reinforcing the need for a strong national grid. 4. **Innovation in Ownership**: Highlights the rise of new ownership models and increased participation in decentralised markets. 5. **Enabling Regulation**: Stresses the need for supportive regulatory frameworks to unlock DER growth and maximise net system benefits.

Question 5: What other feedback would you like to provide to input into the discussion on? (1/3)

a) What a more decentralised electricity system might look like:

- Modular and resilient structure: A decentralised system would feature numerous DER clusters, including rooftop solar, batteries, electric vehicles (EVs), and smart technologies, coordinated through Virtual Power Plants (VPPs) or local energy platforms. This modular approach enhances local reliability and resilience.
- Integration with central grid: While decentralisation promotes local generation, it should not disconnect from the central grid. Instead, it should enhance coordination, allowing consumers to balance reliance on local versus remote energy sources.
- Community ownership and governance: Local communities would co-own or co-govern energy resources, fostering a sense of community and enabling tailored energy solutions that reflect local needs.
- Real-time data access: Consumers would have access to real-time energy data and trading platforms, facilitating informed decision-making and participation in local energy markets.

Question 5: What other feedback would you like to provide to input into the discussion on? (2/3)

b) How this might benefit consumers:

- Lower energy costs: Decentralisation can lead to reduced energy bills through local generation and participation in flexibility markets, allowing consumers to manage their energy use more effectively.
- Increased resilience: Local generation and storage enhance resilience during adverse events, providing reliable energy supply even during grid disruptions.
- Empowerment and choice: Consumers gain more control over their energy needs, enabling them to choose from dynamic tariffs, flexibility services, and export options, fostering a competitive market environment.
- Socio-economic equity: By addressing barriers to DER adoption, such as access to financing and education, decentralisation can promote equity, ensuring that all households, including low-income families, benefit from electrification and local generation.

Question 5: What other feedback would you like to provide to input into the discussion on? (3/3)

c) What might be needed to unlock these benefits:

- Regulatory frameworks: A supportive regulatory environment is essential, including reforms in distribution pricing, clear cost recovery pathways, and mechanisms that encourage community-scale DERs.
- Investment in infrastructure: Continued investment in network infrastructure is crucial to accommodate the integration of DERs and maintain system reliability.
- Consumer education and engagement: Initiatives to enhance energy literacy among consumers are vital, ensuring they understand their options and the benefits of participating in decentralised energy systems.
- Innovative funding models: Access to low-interest, long-term loans and trusted guidance for households is necessary to facilitate DER adoption, particularly for low-income families and renters.
- Collaboration across stakeholders: Engaging all stakeholders, including policymakers, network operators, and community organisations, is critical for coordinated planning and implementation of decentralised energy solutions

Question 5: What other feedback would you like to provide to input into the discussion on?

Submitter type	Key themes
Consumers, Communities, & NGOs	1. **Equitable Access for All:** Decentralisation must prioritise affordability and accessibility for all socio-economic groups, especially vulnerable households facing rising energy costs and housing challenges. 2. **Community-Led Solutions:** Local communities, iwi, and grassroots groups are best placed to lead energy initiatives that reflect regional needs. Empowering them is essential for the success and sustainability of decentralisation. 3. **Enabling Role of the State:** The state should act as a facilitator—providing resources, support, and enabling frameworks—rather than imposing top-down models, to build trust and ensure local ownership. 4. **Inclusive Innovation and Technology:** Targeted innovation is needed to serve low-income communities, improve energy resilience, and ensure the system is user-friendly, efficient, and supportive of equity. 5. **Cultural and Visionary Alignment:** A future electricity system must be inclusive, culturally informed, and seen as a basic right—delivering reliable, fair, and accessible energy akin to essential services like water.
Independent Retailers, Generators, & Innovators	1. **Equity and Community Empowerment:** Ensuring DERs benefit all socio-economic groups, especially vulnerable families, through inclusive, community-led solutions that foster shared resources and collective care. 2. **Balanced and Resilient Energy System:** Advocates for integrating centralised and decentralised solutions to enhance system efficiency, flexibility, and resilience, particularly in response to climate and supply disruptions. 3. **Regulatory and Financial Enablement:** Calls for supportive policy and regulatory settings that remove barriers for community-scale DERs and offer affordable financing to ensure broad access. 4. **Innovation and System Integration:** Highlights the need for innovative technologies and local energy markets that support low-income households and seamlessly integrate DERs into the national grid. 5. **Consumer Literacy and Inclusive Planning:** Emphasises the importance of energy education and coordinated long-term planning with diverse stakeholder input to ensure an equitable and effective transition.
Other Individuals	1. **Resilience and Modularity of VPPs:** VPPs can enhance grid resiliency and enable a more modular energy system, but require system adjustments for effective integration and flexibility. 2. **Risks from Electrification and Climate Impacts:** Increased electrification, coupled with infrastructure vulnerability to extreme weather, poses risks of prolonged outages and supply shortages. 3. **Positive Feedback Loops:** Distributed systems like VPPs may foster productivity and resilience through self-reinforcing investment and innovation cycles. 4. **Financial Considerations:** The transition to a resilient, decentralised system will involve significant financial investment, requiring careful planning and support.

Question 5: What other feedback would you like to provide to input into the discussion on?

Submitter type	Key themes
T & D Networks	1. **Equity and Community-Centric Access:** Emphasises the need for decentralisation to benefit all socio-economic groups, particularly vulnerable families, through inclusive, community-led solutions that foster shared support and resilience. 2. **Integration and System Optimisation:** Supports a balanced energy system combining centralised and decentralised solutions, tailored to local needs for greater efficiency, affordability, and adaptability. 3. **Policy, Regulatory, and Financial Support:** Calls for enabling regulatory frameworks and accessible financing to scale community-level DERs, remove entry barriers, and promote equitable participation. 4. **Innovation and Consumer Empowerment:** Highlights the importance of developing innovative technologies and local energy markets, alongside improving consumer energy literacy to boost participation and control. 5. **Strategic Planning and Resilience:** Stresses the need for inclusive, long-term planning and coordination across stakeholders to ensure a resilient, flexible energy system that meets future challenges.
Iwi & mana whenua	1. **Consumer Empowerment and Market Competition:** Decentralisation should enable consumers to manage their own energy needs and encourage greater market competition by breaking existing monopolies in generation, trading, and retail. 2. **Legislative and Corporate Reform:** A shift away from profit-driven models toward equitable, consumer-focused policies is needed, requiring significant legislative and corporate behaviour change. 3. **Support for Māori and Community-Led Projects:** Flexible regulations, seed funding, and technical assistance are essential to empower iwi, marae, and Māori-led energy initiatives. 4. **Inclusive and Transparent Governance:** Co-governed decision-making frameworks must be established to ensure transparency and inclusion of diverse community perspectives in shaping the energy system. 5. **Pathways for Māori Energy Providers:** Clear, supportive pathways are necessary for Māori-owned energy providers to participate in and influence the electricity market.
Gentailers	1. **Hybrid Decentralised Model:** A balanced approach integrating local generation and flexibility services with the national grid to enhance innovation, efficiency, and fairness while maintaining reliability. 2. **Consumer-Centric Benefits:** Decentralisation can boost consumer choice, resilience, and participation, provided equitable access and aligned incentives are ensured through effective regulation. 3. **Enabling Regulatory Framework:** Key regulatory needs include clear investment signals, flexible retail plan design, and fair cost allocation between centralised and decentralised users. 4. **Collaboration with Market Actors:** Close cooperation with generators, retailers, and other stakeholders is essential to foster innovation while safeguarding system stability and consumer protections. 5. **Resilience and Emergency Preparedness:** DERs should be integrated into emergency response strategies, supporting system resilience and continuity during outages.

Question 6: What are other emerging case studies we could learn from? (1/3)

Lyttelton Energy Transition Society launched a community-led initiative focused on renewable energy through the Community Energy Initiative. This program aims to implement a large-scale solar and battery project on the roof of a council-owned facility, which will serve as a community emergency hub. The project seeks to generate more power than the facility uses, allowing for energy sharing with building occupants, nearby council facilities, and pensioner flats, while also creating additional income to fund further community energy projects.

AusNet's community battery initiatives. The project demonstrates how a distribution business can help consumers benefit from their investments in rooftop solar more cheaply than investing in batteries behind the meter.

Energy Queensland is executing a major **community battery programme**, with significant support from the Queensland Government. This project, which is a combination of small community batteries on low voltage networks as well as substation size batteries at higher voltage levels, aims to provide customers access to a virtual energy storage plant. A subscribing customer's excess PV generation is stored for later, after-hours use. The project also aims to reduce the significant variability in network power flows caused by high levels of solar PV generation and avoid net exporting to adjacent states or networks. It also allows them to trade stored energy on the spot market, in cooperation with Origin Energy.

Community DSO schemes, by Northern Powergrid in the UK, in conjunction with LCP Delta and TNEI21, part-funded by an Ofgem innovation grant. The intent of this project is to enable local communities to pursue their own decarbonisation agenda and extend their control over their own energy use and assets, while supporting DSO functionality for the distribution network. While still in trial phase, this type of arrangement appears to hold significant potential for enabling islanded networks close to the edge of distribution networks.

Social housing DER pilots: In these projects agencies co-invest in solar and storage to reduce tenant hardship and grid load.

International care-first models: California's Disadvantaged Communities Green Tariff or Australia's Local Renewable Energy Zones offering renters access to shared DERs.

Question 6: What are other emerging case studies we could learn from? (2/3)

Community Energy Whāingaroa is a grassroots energy project bridging health, equity, and decarbonisation. Project highlights:

- Developed an energy wellbeing program, trained seven local people in home performance and home energy education to deliver the program to the community.
- Installed low-cost retrofits (LEDs, draught stoppers, insulation)
- Supported renters and homeowners with advice, referrals, and subsidy access
- Secured option for lease on land adjacent to local substation
- Worked with local solar specialist on a viable concept for a 2MW solar farm
- Engaged renewable energy specialist for financial modelling to determine the project's viability

CSIRO and Essential Energy trial shows EVs can act as solar-charged home batteries using common CCS2 plug - A joint project by Essential Energy and CSIRO has demonstrated V2G technology using commercially available technology. The project has highlighted the potential of V2G to transform energy management in Australian households and successfully demonstrated how EVs equipped with Australia's most common charging plug type can store and share energy from rooftop solar systems.

Germany serves as a leading example of community and consumer empowerment through decentralisation, with strong support for local ownership of renewable generation via cooperatives and municipal utilities (Stadtwerke). This approach has fostered high public participation and acceptance, highlighting the importance of policy settings that promote shared ownership and community engagement. However, challenges related to grid integration and equitable cost allocation underscore the need for a robust central system alongside localised energy.

Question 6: What are other emerging case studies we could learn from? (3/3)

The **United Kingdom** is advancing decentralisation through innovations in local flexibility markets, dynamic pricing, and smart grid technologies. Initiatives like the Cornwall Local Energy Market trial illustrate how DERs can benefit both consumers and the grid. Reforms by the Office of Gas and Electricity Markets regarding network access and pricing signals aim to encourage efficient decentralised investment while preserving grid integrity.

Australia is notable for adoption of rooftop solar and experimentation with VPPs and community batteries. However, it also highlights the need to address equity concerns, as decentralisation may lead to disparities in energy affordability and security. Australia's regulatory responses include trials of dynamic export pricing and flexible connection agreements. For example SA Power Networks Advanced VPP Grid Integration, https://arena.gov.au/assets/2021/05/advanced-vpp-grid-integration-final-report.pdf.

Bluecurrent is piloting a **high-frequency power quality data service** with Vector, New Zealand's biggest electricity distribution network. This new service delivers batches of five-minute power quality data reads every 20 minutes – up to 72 times a day – an innovation that provides electricity distributors visibility of the low voltage network. Greater low voltage network visibility gives distributors the ability to proactively manage faults on their network and more quickly respond to, and recover from, outages and emergencies – improving local reliability. This enables distributors to more efficiently manage the network, reducing the need for costly network investment and helping reduce overall system costs and cost to consumers.

Counties Energy – Karaka Harbourside DSO Pilot: Real-time DER management across 500+ homes, improving voltage and deferring upgrades.

Rewiring Aotearoa's Electrification Trials: Whole-home electrification paired with DER and tariff optimisation for cost, comfort, and emissions savings.

Hollyfort Farm (mid-Canterbury): A proposed VPP-style concept integrating solar, battery storage, irrigation flexibility, and market participation in a rural context.

Community-led microgrid proposals in Castle Hill, Tākaka, and other areas with strong social capital and local vision.

Next Steps

Next steps

Over the coming months we will build on the foundations developed through the Green Paper, as follows:

- **Engagement:** Build on the new relationships developed and the kōrero initiated through the Green Paper process, and opportunities to further strengthen engagement, including with:
    - Iwi & Māori
    - Youth (particularly important given the intra and intergenerational impacts / commentary)
    - Local government and economic development agencies
    - Energy sector (specifically organisations who didn't engage with the first Green Paper, including gentailers and EDBs)
    - Other key govt departments
- **Horizon scanning:** Continue to monitor for decentralisation-related initiatives, insights and learnings within NZ and internationally to inform the Authority's strategy and work programmes.
- **Gap analysis:** Work through each of the identified enablers, critical success factors and challenges outlined in the Green Paper (and heard in submissions and engagements) and collaborate with other government organisations (and others, as appropriate) to maintain a cohesive approach to addressing these.
- **Ongoing integration of learnings into the Authority's work programmes:** Continue to embed findings from the above into our strategy and existing work programmes.